AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (canceled)

Claim 2 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1]] 18 in which the free exciton recombination radiation excited by current injection is dominant, wherein the peak intensity of the free exciton recombination radiation is stronger than at least twice the peak intensity of other radiations in the wavelength region below 300 nm.

Claim 3 (currently amended): A diamond ultraviolet light-emitting device according to claims [[1 or 2]] 18, wherein the nitrogen concentration within said CVD diamond crystal is 90 ppm or less.

Claim 4 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein the diamond crystal is formed under a plasma having a nitrogen concentration ~~in the plasma when growing said CVD diamond crystal is~~ of 200 ppm or less in a [[the]] ratio of nitrogen atoms/carbon atoms.

Claim 5 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein said CVD diamond crystal is monocrystal.

Claim 6 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein said CVD diamond crystal is a CVD diamond crystal grown homoepitaxially.

Claim 7 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein said CVD diamond crystal is polycrystal.

Claim 8 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein the first electrode and/or the second electrode is formed on a surface of the ~~said CVD~~ diamond crystal, the surface being a growing surface in the chemical vapor deposition (CVD) process ~~is a crystal positioned at the growth surface~~.

Claim 9 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein when the diamond ultraviolet light-emitting device is subjected to a cathode luminescence spectrum method at room temperature, the diamond ultraviolet light-emitting device ~~said CVD diamond crystal~~ emits the free exciton recombination radiation ~~according to cathodoluminescence spectrum at room temperature~~.

Claim 10 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein when the diamond ultraviolet light-emitting device is subjected to a cathode luminescence spectrum method at -190 °C, the diamond ultraviolet light-emitting device emits the free exciton recombination radiation at an intensity ratio (FE/VE) of 0.2 or more, wherein FE represent a peak intensity of the free exciton recombination radiation, and VE represents a peak intensity of a visible radiation ~~said CVD diamond crystal is characterized in that the intensity ratio of the free exciton recombination radiation to visible radiation is 0.2 times or greater according to cathodoluminescence spectrum at -190 °C~~.

Claim 11 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein said CVD diamond crystal comprises a conductive layer at the surface thereof, and electrodes formed on said conductive layer.

Claim 12 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein said CVD diamond crystal comprises a conductive layer at the surface thereof formed by hydrogen-termination, and electrodes formed on said hydrogen termination layer.

Claim 13 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein conductivity is provided to said CVD diamond crystal by doping boron thereto.

Claim 14 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein the boron concentration within said CVD diamond is 60 ppm or less.

Claim 15 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein chemical vapor deposition (CVD) diamond crystal is formed under a plasma having a boron concentration of ~~the concentration of boron within the plasma when growing said CVD diamond crystal is~~ 1000 ppm or less in a ratio of boron atoms/carbon atoms.

Claim 16 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein the diamond crystal has an effective acceptor concentration of ~~within said CVD diamond crystal is~~ 20 ppm or less ~~in quantification~~ based on infrared absorption spectroscopy.

Claim 17 (currently amended): A diamond ultraviolet light-emitting device according to claim [[1 or 2]] 18, wherein when the diamond ultraviolet light-emitting device is subjected to a cathode luminescence spectrum method at -190 °C, the diamond ultraviolet light-emitting device emits the free exciton recombination radiation at an intensity ratio (FE/BE) of 0.1 or more, wherein FE represent a peak intensity of the free exciton recombination radiation, and BE represents a peak intensity of a ~~according to said CVD diamond crystal, the free exciton recombination radiation is 0.1 times or greater in peak intensity than the~~ boron-derived bound exciton recombination radiation ~~according to cathodoluminescence spectrum at -190 °C~~.

Claim 18 (new): A diamond ultraviolet light-emitting device, comprising:

a diamond crystal formed by a chemical vapor deposition (CVD) process;

a first electrode formed on the diamond crystal; and

a second electrode formed on the diamond crystal, wherein when current injection is performed between the first and second electrode, the diamond ultraviolet light-emitting device dominantly emits a light of a free exciton recombination radiation, having a peak wavelength of 235nm, 242nm, 249nm, or 257nm.